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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,044	01/10/2000	JACKIE R. GUST	26.2.A41/B/USA	3834
61145	7590	05/15/2008	EXAMINER	
JAMES W. MILLER, ATTORNEY 527 MARQUETTE AVENUE SUITE 1960, RAND TOWER MINNEAPOLIS, MN 55402			VANAMAN, FRANK BENNETT	
		ART UNIT	PAPER NUMBER	
		3618		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/480,044	GUST ET AL.	
	Examiner	Art Unit	
	Frank B. Vanaman	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 February 2008.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,8-11,24,25 and 33-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 35 is/are allowed.
- 6) Claim(s) 1, 8-11, 24, 25, 33, 34 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Feb 19, 2008 has been entered.

Status of Claims

2. Claims 1, 8-11, 24, 25, and 33-35 are pending, with claims 2-7, 12-23, and 26-32 now being canceled.

Claim Rejections - 35 USC § 112

3. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 25 now recites that the operation of the switch to select an all battery mode (i.e., with the engine of the genset shut off) as "not converting the electric power generating device into a motor that can be used to restart the internal combustion engine".

Initially, the examiner notes that the specification as filed fails to provide a clear antecedent basis for this limitation. Further, applicant has described the engine, genset and related controls in the specification at page 6, line 35 through page 7, line 9; page 9, line 20 through page 10, line 6 and page 12, lines 15-18. None of these cited portions of the specification explicitly teach or describe this limitation. Taken together, the description at page 12, lines 15-18, which describes that the operation of switch 74 can engage the genset to a generating condition from a condition where the engine was previously off, and the description at page 7, line 3, which explicitly states "[e]ngine 40 is coupled only to generator 42". Note the explicit use of the term "only". As such, in view of the operation of the genset being capable of engagement by a switch (rather than a

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manual starting pull), and the explicit statement that the engine is only coupled to the generator, it is not clear how the engine of the genset can be started.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. (cited previously) in view of Arendt (cited previously) and Proctor (cited previously). Reimers et al. teach an electrically driven turf machine including a frame (2) a plurality of ground engaging wheels (14, 16, 126a, 126b) connected to the frame and drivable by plural electric motors (e.g., 162a, 162b) and gearing reduction elements (164a, 164b), a plurality of reel cutting units (18a, 18b) each separately provided with driving motors (22), an electric drive control system (see figures 3a, 3b, 3c, 3d, note 132, 134, 136, 138, 140, 142, etc.) including a power supply circuit (116, 118, 127, 128, 130, etc.), a steering control (38) and a control panel (40) containing various operating elements, an internal combustion engine (29) coupled with an electric power generating device (28/31) which may be an AC alternator (figure 3b, element 114, note col. 7, line 63 through col. 8, line 3), a battery power source (24/127); wherein power supplied from the generator or alternator and power supplied from the batteries may be used to operate the electric motors (col. 5, lines 58-65), and power delivered from the generator or alternator may be used to charge the batteries, and wherein the motors are operably located between the alternator and the wheels, being supplied with electricity from the alternator and being arranged to drive the wheels.

The reference to Reimers et al. fails to teach the use of a battery for providing power wherein the vehicle may be provided power from the generator (and engine) or battery alone, further including switching mechanisms to allow the selection of engine-generator power or battery power. Arendt teaches a power system for a vehicle including an internal combustion engine (1) driving a generator (2) and further including a battery (10); the vehicle powered by motors (A, a) powered by the engine or the battery, wherein the vehicle may be operated in an engine-drive mode (see at least p. 1, lines 66-85, and p. 4, lines 40-64), or a battery drive mode (p.2, lines 93-98), the system

arranged to allow the engine to recharge the battery (e.g., p.1, lines 59-76) wherein at least a switch is provided (note automatic switch 12, 70, 71, 72, 73; and user operated switch 75, 76 which may be adjusted by the user to select when the vehicle is operated in battery only or engine drive modes) to control the drive modes, the operation of switch portion 76 ensuring that the motors are not run on battery power only when the state of charge reaches a predetermined minimum level. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Reimers et al. with a battery and a device for selecting battery-supplied drive current or engine-generator supplied drive current as taught by Arendt for the purpose of allowing a user to operate the vehicle in an emission-free mode (i.e., battery drive only), thus extending the locations and circumstances under which the vehicle may be used, and/or extending the range of the vehicle.

The reference to Reimers et al. and Arendt are discussed above, and while the reference to Arendt teaches that it is well known to provide a state of charge meter for determining battery condition, fails to provide a plurality of indicator lights responsive to fully charged, discharged and intermediate states. Proctor teaches that it is well known to provide a battery state of charge indicator including a plurality of light elements (18a, 18b, 18c, 18d) which may be separately controlled and lit to indicate a fully charged condition (e.g., figure 3A) a relatively discharged condition (e.g., figure 3D or 3E or 3F) and an intermediate condition (e.g., figure 3C) in order to alert a user to the current battery condition. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Reimers and modified by Arendt with the battery state of charge indication device taught by Proctor in place of the state of charge indicator taught by Arendt for the purpose of providing a multi-stage indication device which can simply display given conditions within predetermined ranges, thus simplifying the determination of the battery state by a user.

As more particularly regards claim 9: The reference to Reimers et al. is discussed above and fails to explicitly teach the control of the alternator through a connection to the field windings of the alternator. It is exceptionally old and well known to control a magneto-electric machine by controlling current in the machine's field

windings, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a connection to the field windings of the alternator taught by Reimers et al. for the very old and very well known purpose of controlling the magnetic field strength and thus the operation of the alternator

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers in view of Arendt, Proctor and Downing, Jr. (cited previously). The reference to Reimers et al. as modified by Arendt and Proctor as discussed above fails to teach the separate motors as being explicitly provided with separate power controls connected to a steering wheel, allowing differential driving under turning conditions. Downing, Jr., teaches the use of a pair of separate motors in a steering application wherein a potentiometer (52), associated with a steering system which may be operated by a steering wheel, is used to deliver differential speed control of a pair of wheel motors (42, 64) driving separate wheels (44, 66). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the vehicle of Reimers et al. with a differential drive responsive to steering angle as taught by Downing, Jr., for the purpose of assisting a user in tight radius turning.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. (cited previously) in view of Arendt (cited previously). Reimers et al. teach an electrically driven turf machine including a frame (2) a plurality of ground engaging wheels (14, 16, 126a, 126b) connected to the frame and drivable by plural electric motors (e.g., 162a, 162b) and gearing reduction elements (164a, 164b), a plurality of reel cutting units (18a, 18b) each separately provided with driving motors (22), an electric drive control system (see figures 3a, 3b, 3c, 3d, note 132, 134, 136, 138, 140, 142, etc.) including a power supply circuit (116, 118, 127, 128, 130, etc.), a steering control (38) and a control panel (40) containing various operating elements, an internal combustion engine (29) coupled with an electric power generating device (28/31) which may be an AC alternator (figure 3b, element 114, note col. 7, line 63 through col. 8, line 3), a battery power source (24/127); wherein power supplied from the generator or

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alternator and power supplied from the batteries may be used to operate the electric motors (col. 5, lines 58-65), and power delivered from the generator or alternator may be used to charge the batteries, and wherein the motors are operably located between the alternator and the wheels, being supplied with electricity from the alternator and being arranged to drive the wheels.

The reference to Reimers et al. fails to teach the use of a battery for providing power wherein the vehicle may be provided power from the generator (and engine) or battery alone, further including switching mechanisms to allow the selection of engine-generator power or battery power. Arendt teaches a power system for a vehicle including an internal combustion engine (1) driving a generator (2) and further including a battery (10); the vehicle powered by motors (A, a) powered by the engine or the battery, wherein the vehicle may be operated in an engine-drive mode (see at least p. 1, lines 66-85, and p. 4, lines 40-64), or a battery drive mode (p.2, lines 93-98), the system arranged to allow the engine to recharge the battery (e.g., p.1, lines 59-76) wherein at least a switch is provided (note automatic switch 12, 70, 71, 72, 73; and user operated switch 75, 76 which may be adjusted by the user to select when the vehicle is operated in battery only or engine drive modes) to control the drive modes, the operation of switch portion 76 ensuring that the motors are not run on battery power only when the state of charge reaches a predetermined minimum level. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Reimers et al. with a battery and a device for selecting battery-supplied drive current or engine-generator supplied drive current as taught by Arendt for the purpose of allowing a user to operate the vehicle in an emission-free mode (i.e., battery drive only), thus extending the locations and circumstances under which the vehicle may be used and/or extending the range of the vehicle.

8. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers et al. in view of Ishmael (US 5,790,355) and Musil et al. (US 5,356,238). Reimers et al. teach an electrically driven turf machine including a frame (2) a plurality of ground engaging wheels (14, 16, 126a, 126b) connected to the frame and drivable by

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plural electric motors (e.g., 162a, 162b) and gearing reduction elements (164a, 164b), a plurality of reel cutting units (18a, 18b) each separately provided with driving motors (22), an electric drive control system (see figures 3a, 3b, 3c, 3d, note 132, 134, 136, 138, 140, 142, etc.) including a power supply circuit (116, 118, 127, 128, 130, etc.), a steering control (38) and a control panel (40) containing various operating elements, an internal combustion engine (29) coupled with an electric power generating device (28/31) which may be an AC alternator (figure 3b, element 114, note col. 7, line 63 through col. 8, line 3), a battery power source (24/127); wherein power supplied from the generator or alternator and power supplied from the batteries may be used to operate the electric motors (col. 5, lines 58-65), and power delivered from the generator or alternator may be used to charge the batteries, and wherein the motors are operably located between the alternator and the wheels, being supplied with electricity from the alternator and being arranged to drive the wheels.

The reference to Reimers et al. fails to teach a display having a plurality of current draw indicators for each reel cutter. Ishmael teaches that it is well known to provide an electric mower device with a current draw indicator (30) to show the current draw by a motor (32) used to operate a grass cutting device. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mower taught by Reimers et al. with a current draw (ammeter) display as taught by Ishmael for showing motor current drawn by the reel cutters, so as to allow a user to monitor current used to operate the mower. In that Reimers et al. teach a plurality of mower units (18a, 18b, etc), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an ammeter for each motor, so as to allow a user individually monitor each motor's usage (or determine the presence of an unusual current draw in a single motor). As regards claim 34, the use of a variable length band (e.g. bar-graph display) to display the current draw, it is very old and well known to replace an analog meter with variable band (e.g., bar graph) display to reduce the number of delicate moving parts in a display, as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the analog display

with a variable band display for the purpose of reducing delicate moving parts and improving the robustness of the mower.

The examiner notes, with respect to claim 33, that Reimers et al. fail to explicitly teach the presence of a bedknife, however, a reel cutter would not function as a cutter without a bedknife, and as such, it is understood that either (a) the cutter taught by Lamb inherently includes a bedknife in order to function, or (b) it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a bedknife in the cutter of Lamb so as to render the cutter functional.

The reference to Reimers et al. as modified by Ishmael is discussed above and fails to teach that the current draw indicators are arranged on the display in a configuration mimicking the physical configuration of the cutting units. Musil et al. teach that it is well known to provide a control panel for a vehicle having working units (see panel view, figure 10) wherein the panel is laid out with controls and indicators in positions on the panel associated with physical locations of the working units (e.g., left feet controls and indicators are to the left of the panel, right feed controls and indicators are to the right side of the panel, etc.). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the current indicators taught by the modifying reference to Ishmael in an arrangement which mimics the physical arrangement, as suggested by Musil et al., for the very well known purpose of improving quick understanding of the indicators and related vehicle conditions.

Allowable Subject Matter

9. Claim 35 is allowed.

Claims Not Rejected by the Prior Art

10. Claim 25 is not rejected as being anticipated by or obvious over the prior art of record, but is not in condition for allowance in that it is not supported by the specification as filed.

Response to Comments

11. Applicant's comments, filed with the amendment and request for Continued Examination, have been carefully considered. As regards claim 1 as amended, applicant has proffered a lengthy discussion of certain features of the invention (page

10 of the submission) which are not actually recited in the claims to the detail that they are asserted in the discussion. Although the claims are interpreted in light of the specification, limitations from the specification, that are otherwise not positively claimed, are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As regards reading unclaimed limitations from the specification into the claims

Note that it is not proper for an examiner to read unclaimed limitations into the claims. From MPEP 2111:

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). In this case, note that in Arendt, switches 75 and 76 are adjustable and user operable to the breadth that such operability is recited in the claims.

As regards claim 24, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, applicant argues that it was not obvious to Reimers et al. (note that Lamb is not applied against the claims at this time, and at the time it was applied against the claims, it was as a teaching reference to show that it is

well known to provide a reel cutter driven by a separate motor) to make the modification. This may well be. Note that if 'it were obvious to Reimers et al.' then Reimers et al. would have anticipated the claim, and a secondary reference would not have been needed. The examiner agrees that Reimers et al. do not anticipate the subject matter of claim 24 as currently written. In this case, both Reimers et al. and Arendt teach vehicles which include electric drives, internal combustion generation sources, and batteries. As such, the vehicles taught by both references fall within the same general operating arrangement and strategy, with Arendt teaching an added advantage, namely the ability to operate off the battery for conditions where the battery state of charge allows such operation. In view of this, the advantageous additional mode, which does not require the operation of the engine, and allows the battery to operate the vehicle, is deemed an obvious modification, in view of the combined teachings.

As regards applicant's comments directed to claim 25, the examiner notes that the reference to Arendt certainly does not teach the limitation added by amendment, and would not be appropriately applied prior art, however applicant's own specification also fails to teach this limitation, and in view of the explicit teaching in applicant's specification that (1) the engine is connected only to the generator and (2) a switch can be used to initiate operation of the genset, it is not clear that applicant possessed this feature as of the time of filing and it is also not clear how the engine is started. This is the second time claim 25 has been presented in a manner which recites limitations which are not supported by the originally-filed specification.

As regards claim 33, the examiner notes that it is very old and well known to provide indicators and panels arranged in a manner which mirrors or mimics the physical arrangement of the devices being shown by the indicators, and further cites and applies the reference to Musil et al. to support the obviousness rejection.

Conclusion

12. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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